Hui Cao

List of Publications by Year
in descending order

176 papers	9,129 citations	57758 44 h-index	40979 93 g-index
180 all docs	180 docs citations	180 times ranked	6093 citing authors

#	Article	IF	Citations
1	Depth-targeted energy delivery deep inside scattering media. Nature Physics, 2022, 18, 309-315.	16.7	18
2	Harnessing disorder for photonic device applications. Applied Physics Reviews, 2022, 9, .	11.3	30
3	Controlling Nonlinear Interaction in a Many-Mode Laser by Tuning Disorder. Physical Review Letters, 2022, 128, 143901.	7.8	4
4	Sensitive control of broad-area semiconductor lasers by cavity shape. APL Photonics, 2022, 7, .	5.7	8
5	Circumventing the optical diffraction limit with customized speckles. Optica, 2021, 8, 122.	9.3	28
6	High-Speed Random-Channel Cryptography in Multimode Fibers. IEEE Photonics Journal, 2021, 13, 1-9.	2.0	5
7	Massively parallel ultrafast random bit generation with a chip-scale laser. Science, 2021, 371, 948-952.	12.6	64
8	Suppressing meta-holographic artifacts by laser coherence tuning. Light: Science and Applications, 2021, 10, 104.	16.6	24
9	Highly parallel ultra-fast random number generation from a stable-cavity broad-area semiconductor laser. , 2021, , .		0
10	Customizing the Angular Memory Effect for Scattering Media. Physical Review X, 2021, 11, .	8.9	5
11	Broad-area semiconductor laser for ultrafast parallel random number generation. , 2021, , .		0
12	Parallel Generation of Random Numbers Using a Broad-area Stable-cavity Semiconductor Laser. , 2021, , .		0
13	Ultrafast parallel random number generation with a chip-scale semiconductor laser. , 2021, , .		0
14	Fluctuations and Correlations of Transmission Eigenchannels in Diffusive Media. Physical Review Letters, 2020, 125, 165901.	7.8	8
15	Deep learning of ultrafast pulses with a multimode fiber. APL Photonics, 2020, 5, .	5.7	36
16	Spatial structure of lasing modes in wave-chaotic semiconductor microcavities. New Journal of Physics, 2020, 22, 083002.	2.9	13
17	Multimode-fiber-based single-shot full-field measurement of optical pulses. Optics Letters, 2020, 45, 2462.	3.3	8
18	Fast laser speckle suppression with an intracavity diffuser. Nanophotonics, 2020, 10, 129-136.	6.0	14

#	Article	IF	Citations
19	Spatio-temporal dynamics of highly multimode semiconductor lasers. , 2020, , .		0
20	Spatio-temporal Correlations in Multimode Fibers for Pulse Delivery. , 2019, , .		0
21	Long-range spatio-temporal correlations in multimode fibers for pulse delivery. Nature Communications, 2019, 10, 2973.	12.8	26
22	Angular Memory Effect of Transmission Eigenchannels. Physical Review Letters, 2019, 123, 203901.	7.8	20
23	Electrically pumped semiconductor laser with low spatial coherence and directional emission. Applied Physics Letters, 2019, 115, .	3.3	22
24	Complex lasers with controllable coherence. Nature Reviews Physics, 2019, 1, 156-168.	26.6	97
25	Transverse localization of transmission eigenchannels. Nature Photonics, 2019, 13, 352-358.	31.4	44
26	Applications of Multimode Fibers for Spectroscopy and Polarization Control. , 2019, , .		0
27	Multimode Fiber Based Single-shot Full-field Temporal Measurement. , 2019, , .		0
28	Spatio-Temporal Dynamics of Microlasers with Chaotic Ray Dynamics. , 2019, , .		0
29	Multimode lasing in wave-chaotic semiconductor microlasers. Physical Review A, 2019, 100, .	2.5	9
30	Creating and controlling complex light. APL Photonics, 2019, 4, .	5.7	32
31	Engineering Laser Coherence and its Applications. , 2019, , .		0
32	Random-laser dynamics with temporally modulated pump. Physical Review A, 2019, 99, .	2.5	7
33	Remote key establishment by random mode mixing in multimode fibers and optical reciprocity. Optical Engineering, 2019, 58, 1.	1.0	24
34	Introducing non-local correlations into laser speckles. Optics Express, 2019, 27, 6057.	3.4	15
35	Spatio-temporal lasing dynamics in wave-chaotic and disordered microcavities. , 2019, , .		0
36	On-chip low spatially coherent laser with directional emission. , 2019, , .		0

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37	Statistical description of transport in multimode fibers with mode-dependent loss. New Journal of Physics, 2018, 20, 113028.	2.9	7
38	Customizing speckle intensity statistics. Optica, 2018, 5, 595.	9.3	85
39	Complete polarization control in multimode fibers with polarization and mode coupling. Light: Science and Applications, 2018, 7, 54.	16.6	68
40	Transporting the Optical Chirality through the Dynamical Barriers in Optical Microcavities. Laser and Photonics Reviews, 2018, 12, 1800027.	8.7	22
41	Suppressing spatiotemporal lasing instabilities with wave-chaotic microcavities. Science, 2018, 361, 1225-1231.	12.6	77
42	Engineering Laser Coherence for Imaging Applications. , 2018, , .		0
43	Inverse Design of Long-range Intensity Correlations in Scattering Media. , 2018, , .		0
44	Coherent injection of light into an absorbing scattering medium with a microscopic pore. Optics Letters, 2018, 43, 2189.	3.3	2
45	Enhancing light transmission through a disordered waveguide with inhomogeneous scattering and loss. Applied Physics Letters, 2017, 110, 021103.	3.3	10
46	Correlation-enhanced control of wave focusing in disordered media. Nature Physics, 2017, 13, 497-502.	16.7	77
47	Condensation of thresholds in multimode microlasers. Physical Review A, 2017, 95, .	2.5	4
48	Enabling time resolved microscopy with random Raman lasing. Scientific Reports, 2017, 7, 44572.	3.3	10
49	Enhanced optical coupling and Raman scattering via microscopic interface engineering. Applied Physics Letters, 2017, 111, .	3.3	5
50	Enhanced coupling of light into a turbid medium through microscopic interface engineering. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 7941-7946.	7.1	8
51	Super- and Anti-Principal-Modes in Multimode Waveguides. Physical Review X, 2017, 7, .	8.9	16
52	Perspective on speckle spectrometers. Journal of Optics (United Kingdom), 2017, 19, 060402.	2.2	46
53	Principal modes in multimode fibers: exploring the crossover from weak to strong mode coupling. Optics Express, 2017, 25, 2709.	3.4	43
54	Intracavity frequency-doubled degenerate laser. Optics Letters, 2017, 42, 411.	3.3	10

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55	Customizing Speckle Statistics. , 2017, , .		1
56	Inverse Design of Eigenchannels in Scattering Media. , 2017, , .		0
57	Broadband multimode fiber spectrometer. , 2016, , .		0
58	Ultrahigh-speed, phase-sensitive full-field interferometric confocal microscopy for quantitative microscale physiology. Biomedical Optics Express, 2016, 7, 4674.	2.9	4
59	Coherence switching of a degenerate VECSEL for multimodality imaging. Optica, 2016, 3, 403.	9.3	40
60	Evanescently coupled multimode spiral spectrometer. Optica, 2016, 3, 956.	9.3	96
61	Controlling mode competition by tailoring the spatial pump distribution in a laser: a resonance-based approach. Optics Express, 2016, 24, 26006.	3.4	16
62	Coherent artifact suppression in line-field reflection confocal microscopy using a low spatial coherence light source. Optics Letters, 2016, 41, 4775.	3.3	3
63	Controlling a microdisk laser by local refractive index perturbation. Applied Physics Letters, 2016, 108, .	3.3	3
64	The optical frequency comb fibre spectrometer. Nature Communications, 2016, 7, 12995.	12.8	38
65	Principal modes of a multimode fiber with strong mode coupling. , 2016, , .		0
66	Controlling Random Lasing with Three-Dimensional Plasmonic Nanorod Metamaterials. Nano Letters, 2016, 16, 2471-2477.	9.1	66
67	Broadband multimode fiber spectrometer. Optics Letters, 2016, 41, 2029.	3.3	57
68	Polarization control of light transmission through a multimode fiber with strong polarization mixing. , 2016, , .		0
69	Interaction-induced mode switching in steady-state microlasers. Optics Express, 2016, 24, 41.	3.4	12
70	Control of Energy Density inside a Disordered Medium by Coupling to Open or Closed Channels. Physical Review Letters, 2016, 117, 086803.	7.8	57
71	Spatiotemporal Control of Light Transmission through a Multimode Fiber with Strong Mode Coupling. Physical Review Letters, 2016, 117, 053901.	7.8	77
72	Fluctuations and correlations of emission from random lasers. Physical Review A, 2016, 93, .	2.5	17

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73	Topological defect lasers. Journal of Optics (United Kingdom), 2016, 18, 014005.	2.2	9
74	Light transmission channels in random scattering media (Conference Presentation). , 2016, , .		0
75	Lighting up microscopy with random Raman lasing. , 2016, , .		0
76	Coherent Control of Photocurrent in a Strongly Scattering Photoelectrochemical System. ACS Photonics, 2016, 3, 449-455.	6.6	26
77	A narrow-band speckle-free light source via random Raman lasing. Journal of Modern Optics, 2016, 63, 46-49.	1.3	22
78	Spatial Coherence Engineering of Lasers. , 2016, , .		0
79	Speckle-Based Spectrometers. , 2016, , .		0
80	Using geometry to manipulate long-range correlation of light inside disordered media. Physical Review B, 2015, 92, .	3.2	7
81	Control of mesoscopic transport by modifying transmission channels in opaque media. Physical Review B, 2015, 92, .	3.2	19
82	Minimum reflection channel in amplifying random media. Physical Review B, 2015, 92, .	3.2	2
83	Broadband Coherent Enhancement of Transmission and Absorption in Disordered Media. Physical Review Letters, 2015, 115, 223901.	7.8	41
84	Multiscale patterning of a metallic glass using sacrificial imprint lithography. Microsystems and Nanoengineering, 2015, 1, .	7.0	16
85	Pump-controlled modal interactions in microdisk lasers. Physical Review A, 2015, 91, .	2.5	32
86	Low-spatial-coherence high-radiance broadband fiber source for speckle free imaging. Optics Letters, 2015, 40, 4607.	3.3	54
87	Photonic crystals with topological defects. Physical Review A, 2015, 91, .	2.5	6
88	The illumination characteristics of operative microscopes. American Journal of Otolaryngology - Head and Neck Medicine and Surgery, 2015, 36, 356-360.	1.3	8
89	Rotating Optical Microcavities with Broken Chiral Symmetry. Physical Review Letters, 2015, 114, 053903.	7.8	51
90	Dielectric microcavities: Model systems for wave chaos and non-Hermitian physics. Reviews of Modern Physics, 2015, 87, 61-111.	45.6	520

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91	Low spatial coherence electrically pumped semiconductor laser for speckle-free full-field imaging. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 1304-1309.	7.1	117
92	Mesoporous GaN for Photonic Engineeringâ€"Highly Reflective GaN Mirrors as an Example. ACS Photonics, 2015, 2, 980-986.	6.6	129
93	Modification of light transmission channels by inhomogeneous absorption in random media. Optics Express, 2015, 23, 11043.	3.4	28
94	Rotation-induced evolution of far-field emission patterns of deformed microdisk cavities. Optica, 2015, 2, 323.	9.3	28
95	Optical resonances in rotating dielectric microcavities of deformed shape. Journal of the Optical Society of America B: Optical Physics, 2015, 32, 1736.	2.1	8
96	Differential Expression of Ecdysone Receptor Leads to Variation in Phenotypic Plasticity across Serial Homologs. PLoS Genetics, 2015, 11, e1005529.	3.5	69
97	Coherent Perfect Absorbers and Coherent Enhancement of Absorption. , 2015, , .		0
98	Modification of Light Transmission Channels by Inhomogeneous Absorption in Random Media. , 2015, , .		0
99	Control of Transmission Eigenchannels by Modifying the Geometry of Turbid Media. , 2015, , .		0
100	Reduced Reflection of Light in Random Amplifying Media. , 2015, , .		0
101	Tailoring Spatial Coherence of Lasers for Speckle-Free Imaging. , 2015, , .		0
102	Artificial selection for structural color on butterfly wings and comparison with natural evolution. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 12109-12114.	7.1	61
103	Controlling Diffusion of Light inside a Disordered Photonic Waveguide. , 2014, , .		0
104	Full-field interferometric confocal microscopy using a VCSEL array. Optics Letters, 2014, 39, 4446.	3.3	32
105	High-resolution and broadband all-fiber spectrometers. Optica, 2014, 1, 175.	9.3	135
106	Manipulation of High-Order Scattering Processes in Ultrasmall Optical Resonators to Control Far-Field Emission. Physical Review Letters, 2014, 112, 163902.	7.8	7
107	Control of light diffusion in a disordered photonic waveguide. Applied Physics Letters, 2014, 105, 041104.	3.3	10
108	Active control of emission directionality of semiconductor microdisk lasers. Applied Physics Letters, 2014, 104, 231108.	3.3	75

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109	Transmission channels for light in absorbing random media: From diffusive to ballistic-like transport. Physical Review B, 2014, 89, .	3.2	53
110	Rotation-induced mode coupling in open wavelength-scale microcavities. Physical Review A, 2014, 90, .	2.5	17
111	Probing long-range intensity correlations inside disordered photonic nanostructures. Physical Review B, 2014, 90, .	3.2	14
112	Cryptic iridescence in a fossil weevil generated by single diamond photonic crystals. Journal of the Royal Society Interface, 2014, 11, 20140736.	3.4	16
113	Physics and applications of random lasers. , 2014, , .		1
114	Coherent Control of Total Transmission of Light through Disordered Media. Physical Review Letters, 2014, 112, 133903.	7.8	104
115	Position-Dependent Diffusion of Light in Disordered Waveguides. Physical Review Letters, 2014, 112, 023904.	7.8	51
116	Generating Non-Rayleigh Speckles with Tailored Intensity Statistics. Physical Review Letters, 2014, 112, .	7.8	73
117	Noise analysis of spectrometers based on speckle pattern reconstruction. Applied Optics, 2014, 53, 410.	1.8	30
118	PARTIALLY PUMPED RANDOM LASERS. International Journal of Modern Physics B, 2014, 28, 1430001.	2.0	26
119	Secure Optical Communication Using Random Mode Mixing and Time-Reversal Symmetry in Multimode Fibers. , 2014, , .		2
120	Compact spectrometer based on a disordered photonic chip. Nature Photonics, 2013, 7, 746-751.	31.4	424
121	Controlling multimode coupling by boundary-wave scattering. Physical Review A, 2013, 88, .	2.5	20
122	A cascade laser's random walk. Nature, 2013, 503, 200-201.	27.8	5
123	Plasmonic Enhancement of Dye-Sensitized Solar Cells Using Coreâ€“Shellâ€“Shell Nanostructures. Journal of Physical Chemistry C, 2013, 117, 927-934.	3.1	117
124	Noise properties of coherent perfect absorbers and critically coupled resonators. Physical Review A, 2013, 87, .	2.5	9
125	All-fiber spectrometer based on speckle pattern reconstruction. Optics Express, 2013, 21, 6584.	3.4	214
126	Low-loss high-speed speckle reduction using a colloidal dispersion. Applied Optics, 2013, 52, 1168.	1.8	55

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127	Broadband subwavelength focusing of light using a passive sink. Optics Express, 2013, 21, 17435.	3.4	28
128	Extreme output sensitivity to subwavelength boundary deformation in microcavities. Physical Review A, 2013, 87, .	2.5	31
129	Formation of long-lived resonances in hexagonal cavities by strong coupling of superscar modes. Physical Review A, 2013, 88, .	2.5	37
130	Using a multimode fiber as a high-resolution, low-loss spectrometer. Optics Letters, 2012, 37, 3384.	3.3	157
131	Wavelength-scale microdisks as optical gyroscopes: a finite-difference time-domain simulation study. Journal of the Optical Society of America B: Optical Physics, 2012, 29, 1648.	2.1	18
132	Lasing in localized mode at optimized photonic amorphous structure. Applied Physics Letters, 2012, 101, 091101.	3.3	6
133	Directional waveguide coupling from a wavelength-scale deformed microdisk laser. Applied Physics Letters, 2012, 100, .	3.3	12
134	Local Chirality of Optical Resonances in Ultrasmall Resonators. Physical Review Letters, 2012, 108, 253902.	7.8	47
135	Perfect coupling of light to surface plasmons by coherent absorption. Physical Review Letters, 2012, 108, 186805.	7.8	152
136	Speckle-free laser imaging using random laser illumination. Nature Photonics, 2012, 6, 355-359.	31.4	793
137	Channeling Chaotic Rays into Waveguides for Efficient Collection of Microcavity Emission. Physical Review Letters, 2012, 108, 243902.	7.8	85
138	Photonic band gaps in three-dimensional network structures with short-range order. Physical Review A, 2011, 84, .	2.5	57
139	Time-Reversed Lasing and Interferometric Control of Absorption. Science, 2011, 331, 889-892.	12.6	673
140	Control of Lasing in Biomimetic Structures with Short-Range Order. Physical Review Letters, 2011, 106, 183901.	7.8	77
141	Spatial coherence of random laser emission. Optics Letters, 2011, 36, 3404.	3.3	114
142	Lasing modes in polycrystalline and amorphous photonic structures. Physical Review A, 2011, 84, .	2.5	11
143	Wavelength-scale deformed microdisk lasers. Physical Review A, 2011, 84, .	2.5	24
144	Lasing in Thueâ€“Morse structures with optimized aperiodicity. Applied Physics Letters, 2011, 98, .	3.3	20

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145	Lasing in localized modes of a slow light photonic crystal waveguide. Applied Physics Letters, 2011, 98, 241107.	3.3	32
146	Morphology-induced plasmonic resonances in silver-aluminum alloy thin films. Applied Physics Letters, 2011, 99, .	3.3	22
147	Nanoscale Coherent Perfect Absorber of Light. , 2011, , .		1
148	Effects of spatially nonuniform gain on lasing modes in weakly scattering random systems. Physical Review A, 2010, 81, .	2.5	39
149	Structural Color: How Noniridescent Colors Are Generated by Quasi-ordered Structures of Bird Feathers (Adv. Mater. 26-27/2010). Advanced Materials, 2010, 22, n/a-n/a.	21.0	3
150	A conductivity-based selective etching for next generation GaN devices. Physica Status Solidi (B): Basic Research, 2010, 247, 1713-1716.	1.5	84
151	Relation between transmission and energy stored in random media with gain. Physical Review B, 2010, 82, .	3.2	15
152	Photonic-band-gap effects in two-dimensional polycrystalline and amorphous structures. Physical Review A, 2010, 82, .	2.5	43
153	Giant resonances near the split band edges of two-dimensional photonic crystals. Physical Review A, 2010, 82, .	2.5	14
154	Demonstration of laser action in a pseudorandom medium. Applied Physics Letters, 2010, 97, .	3.3	23
155	Numerical study of amplified spontaneous emission and lasing in random media. Physical Review A, 2010, 82, .	2.5	25
156	Coherent Perfect Absorbers: Time-Reversed Lasers. Physical Review Letters, 2010, 105, 053901.	7.8	912
157	LASING IN RANDOM MEDIA. Advanced Series in Applied Physics, 2010, , 205-251.	0.0	2
158	Photonic bandgap engineering with inverse opal multistacks of different refractive index contrasts. Applied Physics Letters, 2009, 95, 091101.	3.3	31
159	Finite-Difference Time-Domain Formulation of Stochastic Noise in Macroscopic Atomic Systems. Journal of Lightwave Technology, 2009, 27, 4530-4535.	4.6	25
160	Chaotic microcavity laser with high quality factor and unidirectional output. Physical Review A, 2009, 80, .	2.5	89
161	Finite-difference time-domain simulation of thermal noise in open cavities. Physical Review A, 2008, 77, .	2.5	20
162	Collective electronic states in inhomogeneous media at critical and subcritical metal concentrations. Physical Review B, 2007, 75, .	3.2	2

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163	Effect of local pumping on random laser modes in one dimension. Journal of the Optical Society of America B: Optical Physics, 2007, 24, A26.	2.1	36
164	Effect of amplification on conductance distribution of a disordered waveguide. Physical Review E, 2006, 74, 056609.	2.1	8
165	Chaotic Microcavity Lasers. , 2006, , .		0
166	Optical study of spatially ordered InAs quantum dots in disk-like structures. AIP Conference Proceedings, 2005, , .	0.4	0
167	Field and intensity correlations in amplifying random media. Physical Review B, 2005, 71, .	3.2	26
168	Review on latest developments in random lasers with coherent feedback. Journal of Physics A, 2005, 38, 10497-10535.	1.6	332
169	Effects of localization and amplification on intensity distribution of light transmitted through random media. Physical Review E, 2004, 70, 037603.	2.1	17
170	Random lasing in closely packed resonant scatterers. Journal of the Optical Society of America B: Optical Physics, 2004, 21, 159.	2.1	146
171	Cavity formation and light propagation in partially ordered and completely random one-dimensional systems. IEEE Journal of Quantum Electronics, 2003, 39, 364-374.	1.9	36
172	Lasing in disordered media. Progress in Optics, 2003, , 317-370.	0.6	26
173	Lasing in random media. Waves in Random and Complex Media, 2003, 13, R1-R39.	1.5	483
174	Direct time-domain observation of transition from strong to weak coupling in a semiconductor microcavity. Applied Physics Letters, 1998, 73, 3031-3033.	3.3	11
175	Bandgap enhanced random laser. , 0, , .		0
176	Four-level two-electron FDTD model of lasing action in a semiconductor. , 0, , .		0